[illegible]

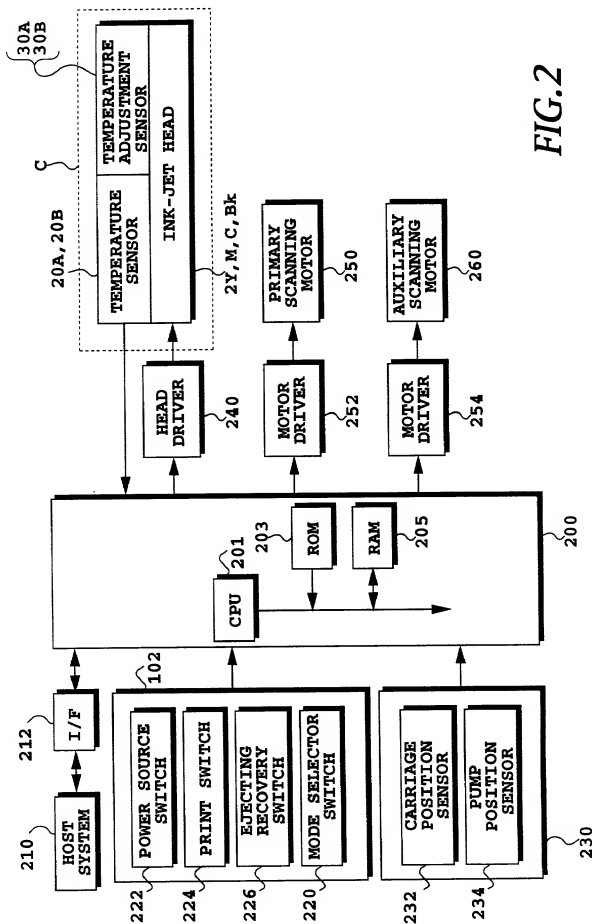


FIG. 2

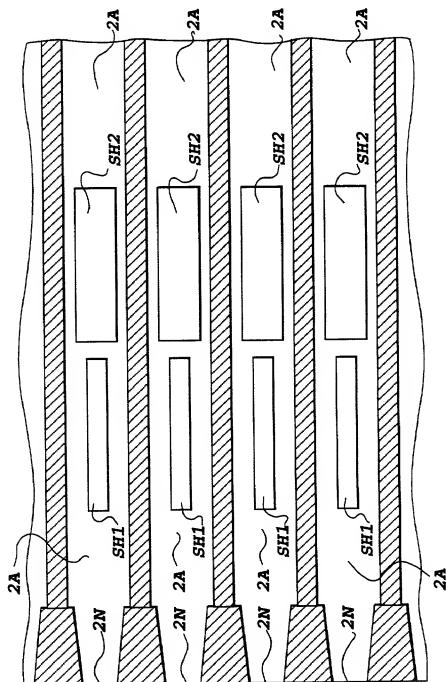


FIG.4

FIG. 5

FIG. 5A

FIG. 5B

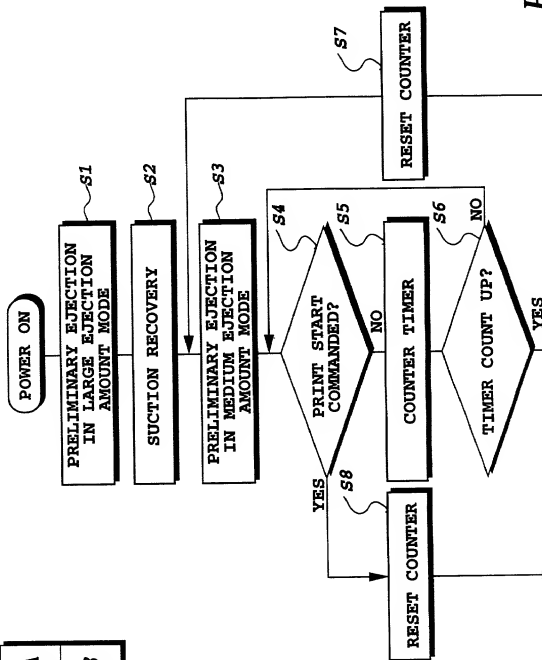


FIG. 5A

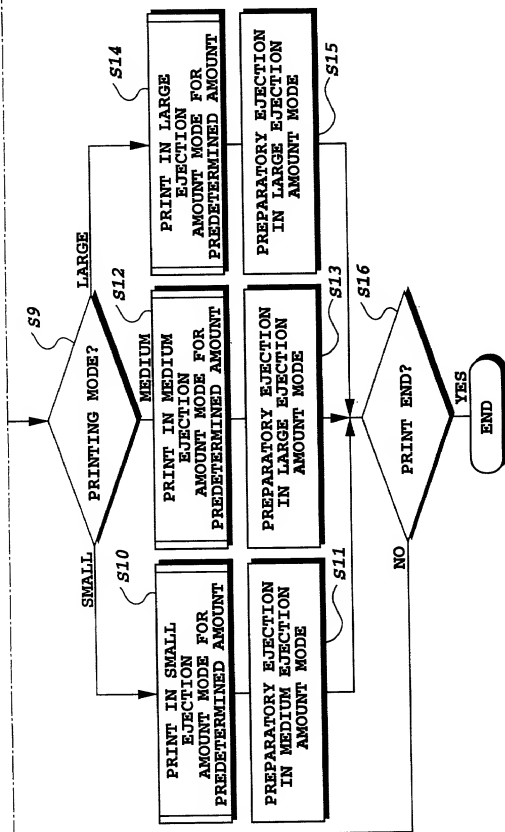


FIG5B

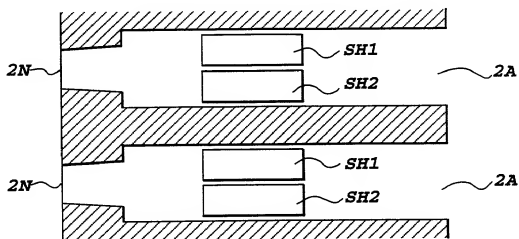


FIG.6A

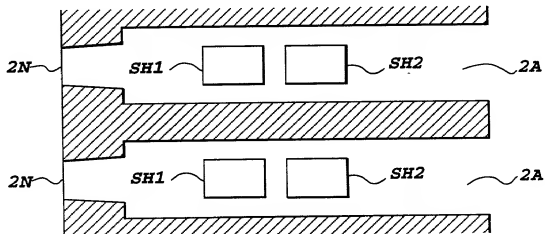


FIG.6B

FIG. 7

FIG. 7A

FIG. 7B

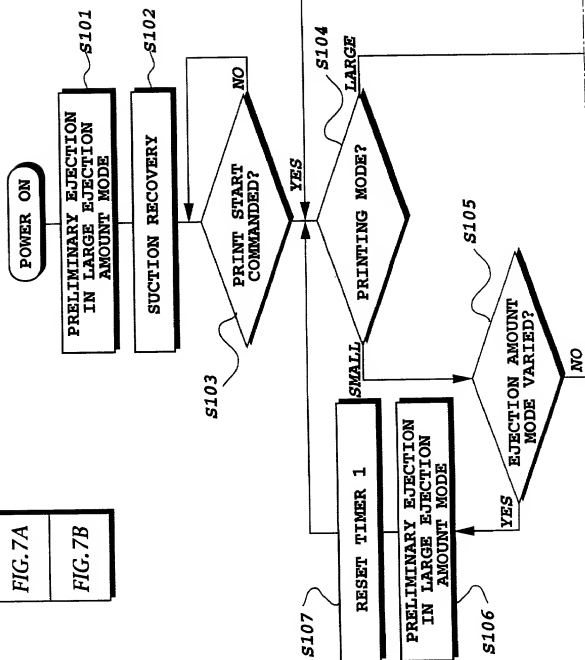


FIG. 7A

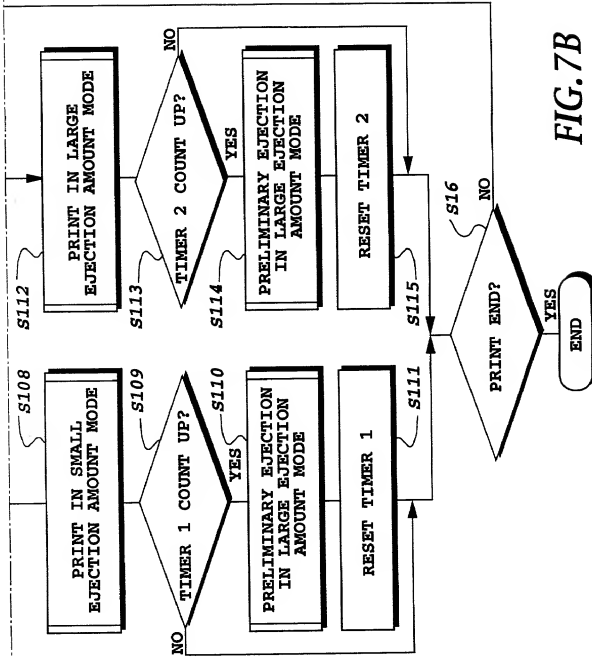
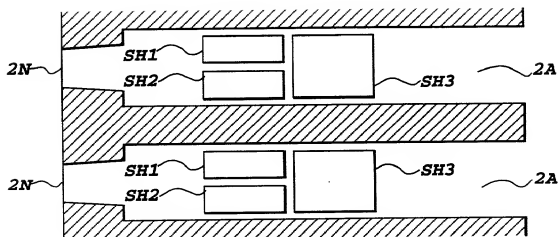


FIG. 7B

**FIG. 8**

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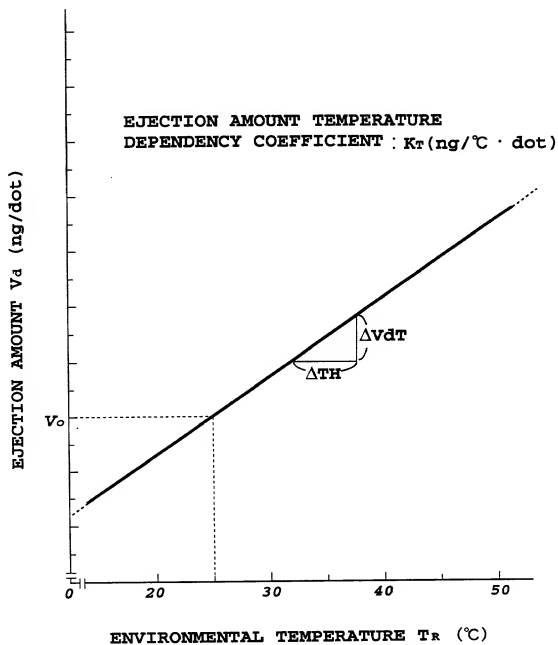


FIG.9

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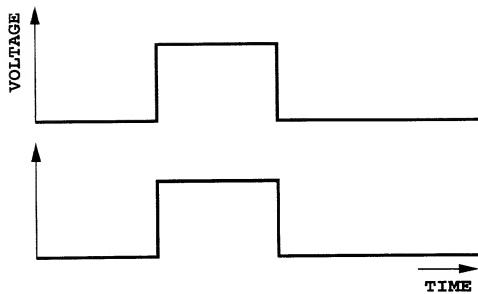


FIG.10A

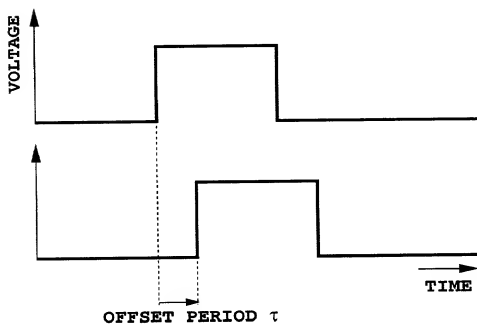


FIG.10B

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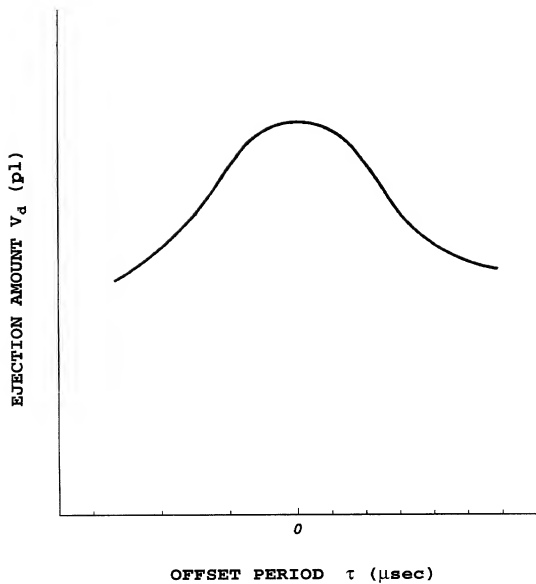


FIG. 11

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
HEAD TEMPERATURE T_h ($^{\circ}\text{C}$)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE ~ LESS THAN 53	53 OR MORE
OFFSET PERIOD τ (μsec)	0	0.8	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.4	4.0

FIG.12

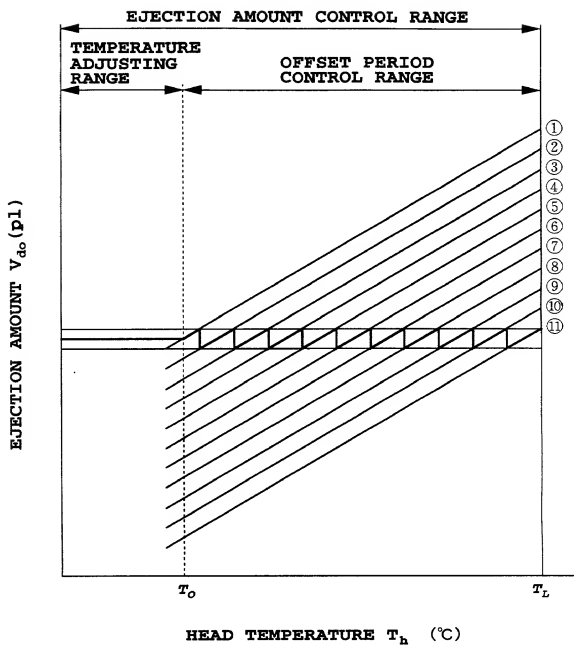


FIG.13

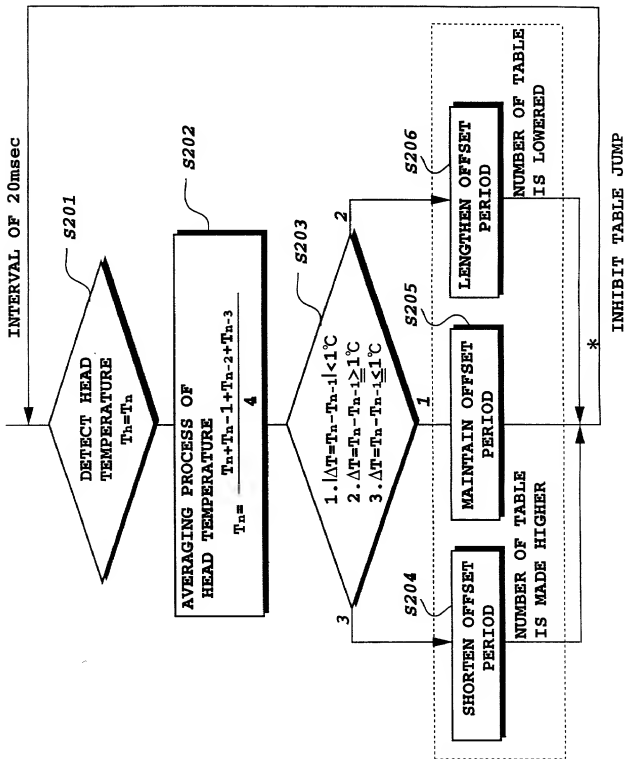


FIG. 14

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
HEAD TEMPERATURE T_h ($^{\circ}\text{C}$)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE ~ LESS THAN 53	53 OR MORE
OFFSET PERIOD τ (μsec)	0	-0.8	-1.2	-1.5	-1.8	-2.1	-2.4	-2.7	-3.0	-3.4	-4.0

FIG.15

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧
HEAD TEMPERATURE T_h (°C)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE
OFFSET PERIOD τ (μ sec)	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3

FIG.16

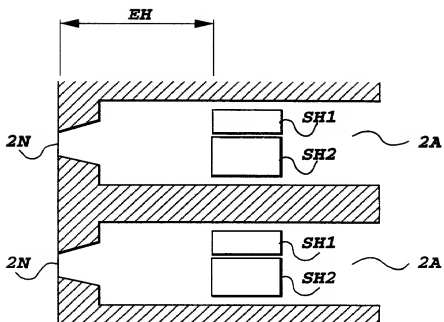


FIG.17

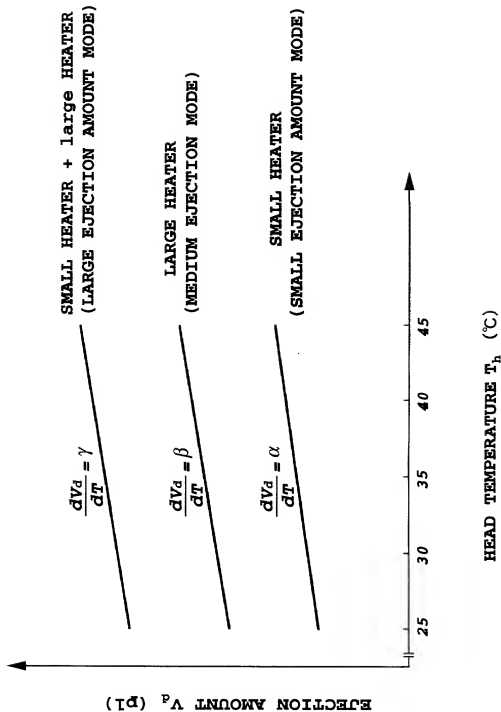


FIG.18

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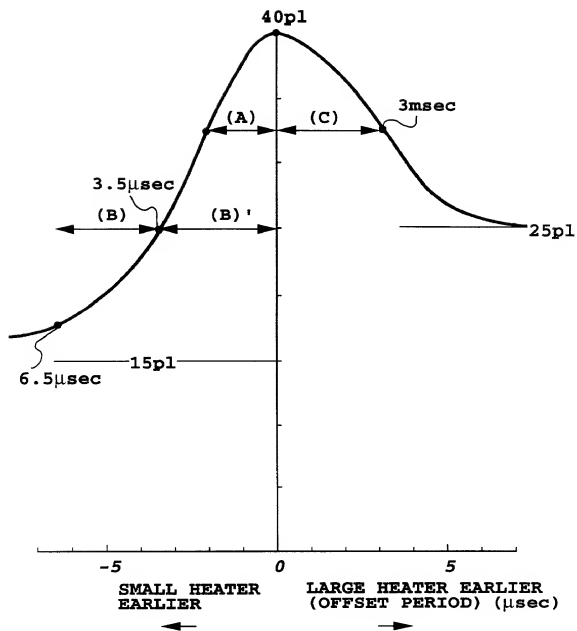


FIG.19

LARGE EJECTION AMOUNT MODE (40pl/dot)

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
HEAD TEMPERATURE T_h ($^{\circ}\text{C}$)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE
OFFSET PERIOD τ (μsec)	0	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0

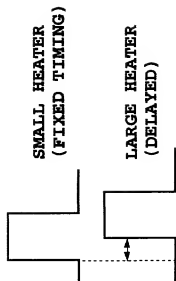
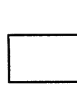


FIG.20A

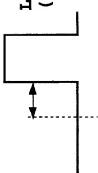
(25pl/dot)

MEDIUM EJECTION AMOUNT MODE

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
HEAD TEMPERATURE Th (°C)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE
OFFSET PERIOD τ (μ sec)	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.7	6.1	6.5



SMALL HEATER
(FIXED TIMING)



LARGE HEATER
(DELAYED)

FIG.20B

LARGE EJECTION AMOUNT MODE (40pl/dot)

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
HEAD TEMPERATURE T_h ($^{\circ}\text{C}$)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE
OFFSET PERIOD τ (μsec)	0	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0

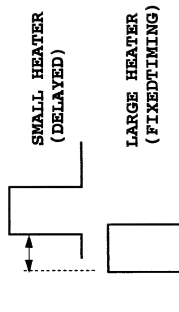



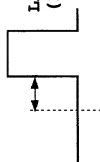
FIG.21A

MEDIUM EJECTION AMOUNT MODE (25pl/dot)

TABLE NO.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
HEAD TEMPERATURE T_h ($^{\circ}\text{C}$)	LESS THAN 26	26 OR MORE ~ LESS THAN 29	29 OR MORE ~ LESS THAN 32	32 OR MORE ~ LESS THAN 35	35 OR MORE ~ LESS THAN 38	38 OR MORE ~ LESS THAN 41	41 OR MORE ~ LESS THAN 44	44 OR MORE ~ LESS THAN 47	47 OR MORE ~ LESS THAN 50	50 OR MORE
OFFSET PERIOD τ (μsec)	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.7	6.1	6.5



SMALL HEATER
(FIXED)



LARGE HEATER
(DELAYED)

FIG.21B

SH1: SMALL HEATER

SH2: LARGE HEATER

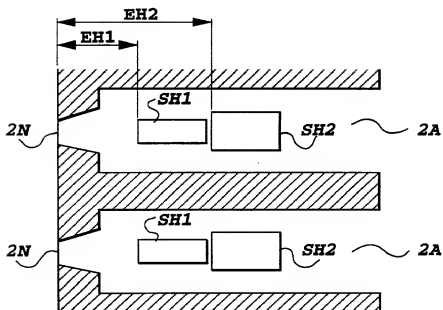


FIG.22

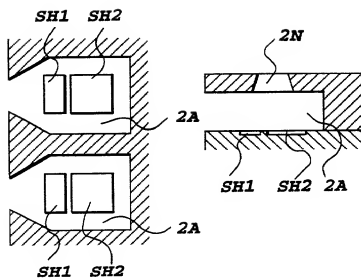
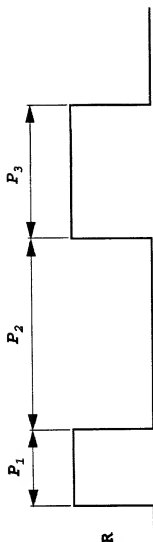
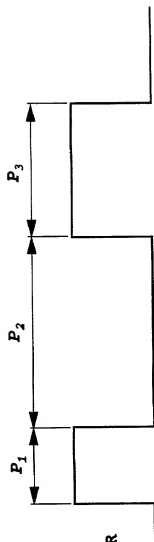


FIG.23



PULSE FOR SMALL HEATER

FIG. 24A



PULSE FOR LARGE HEATER

FIG. 24B

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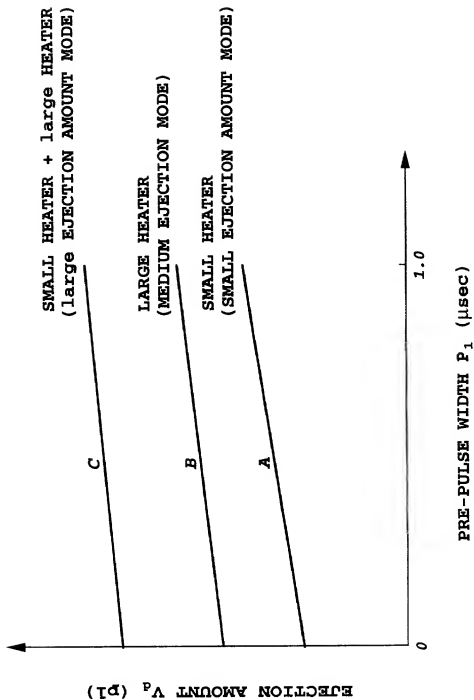


FIG.25

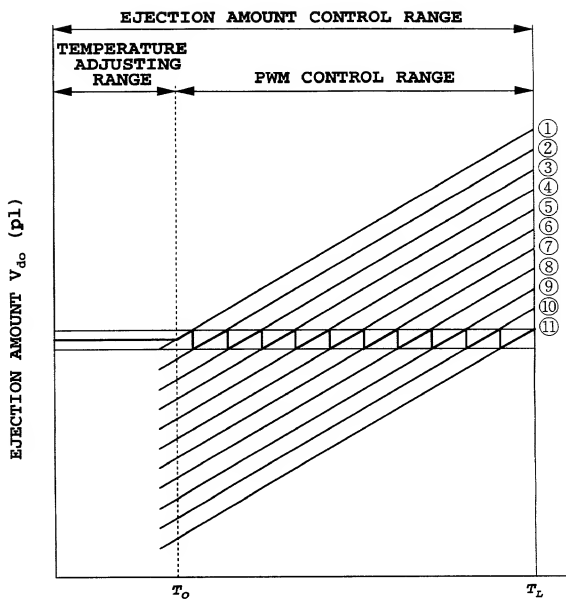


FIG.26

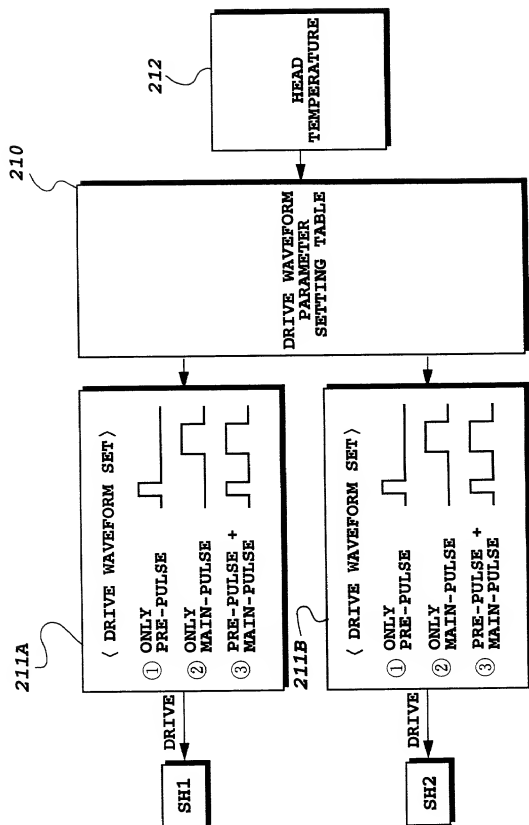


FIG. 27

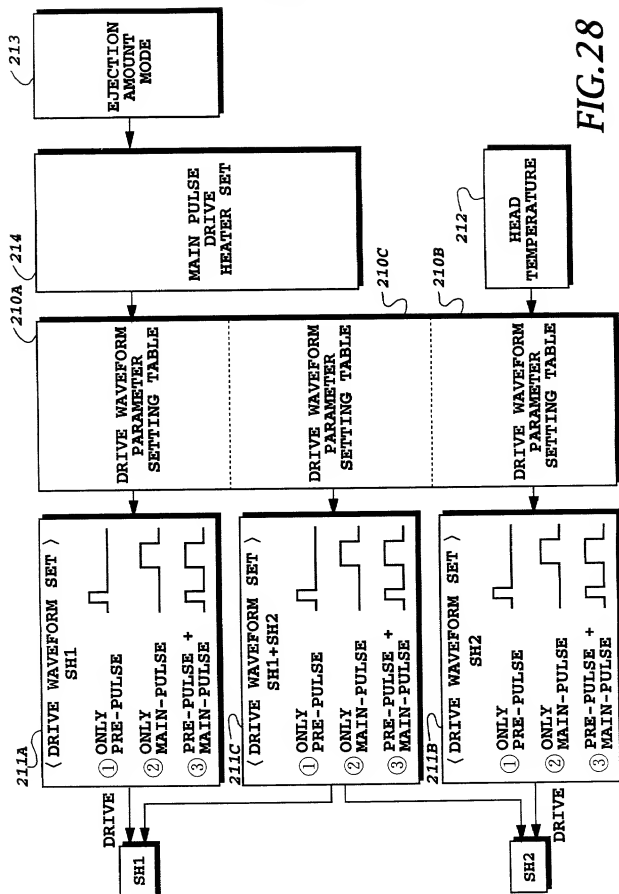


FIG. 28

EJECTION AMOUNT MODE	MAIN HEAT PULSE DRIVEN HEATER	PRE-HEAD PULSE DRIVEN HEATER
SMALL	SH1	SH1
		SH2
		SH1+SH2
MEDIUM	SH2	SH1
		SH2
		SH1+SH2
LARGE	SH1+SH2	SH1
		SH2
		SH1+SH2

FIG.29

P₁ TABLE FOR SMALL EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER PRE-PULSE (μsec)	1.0	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300	0.250	0.200	0.150	0.10
LARGE HEATER PRE-PULSE (μsec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(15pl)

FIG.30A

P₁ TABLE FOR MEDIUM EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER PRE-PULSE (μsec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE HEATER PRE-PULSE (μsec)	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	0	0	0	0	0	0	0	0

(25pl)

FIG.30B

P₁ TABLE FOR LARGE EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60
SMALL HEATER PRE-PULSE (μsec)	1.0	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300	0.250	0.200	0.150
LARGE HEATER PRE-PULSE (μsec)	1.0	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300	0.250	0.200	0.150

(40pl)

FIG.30C

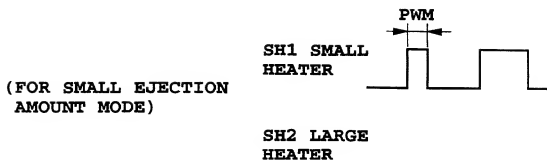


FIG.31A

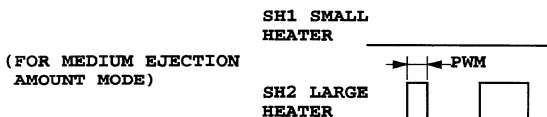


FIG.31B

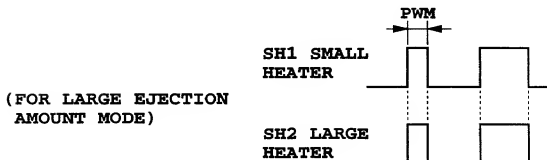


FIG.31C

P₁ TABLE FOR SMALL EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~
SMALL HEATER PRE-PULSE	1.0	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300	0.250	0.200	0.150	0.10
LARGE HEATER PRE-PULSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(15pl)

FIG.32A

P₁ TABLE FOR MEDIUM EJECTION AMOUNT MODE

HEAD T ^o TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	60~
SMALL HEATER PRE-PULSE (μsec)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.6	0.4	0.2	0	0	0	0
LARGE HEATER PRE-PULSE (μsec)	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	0	0	0	0	0	0	0	0

(25p1)

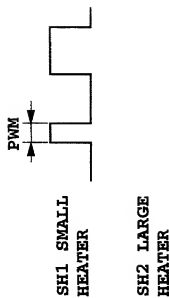
FIG.32B

P₁ TABLE FOR LARGE EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	60~
SMALL HEATER PRE-PULSE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2
(μsec)																			
LARGE HEATER PRE-PULSE	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0	0	0	0	0	0	0	0	0
(μsec)																			

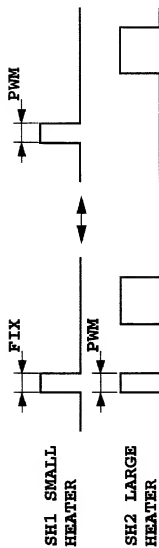
(40pl)

FIG.32C



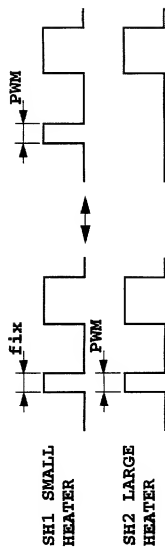
(FOR SMALL EJECTION
AMOUNT MODE)

FIG. 33A



(FOR MEDIUM EJECTION
AMOUNT MODE)

FIG. 33B



(FOR LARGE EJECTION
AMOUNT MODE)

FIG. 33C

P₁ TABLE FOR SMALL EJECTION AMOUNT MODE
(FOR LOW TEMPERATURE)

HEAD T TEMPERATURE (°C)	~16	~18	~20	~22	~24	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52
SMALL HEATER PRE-PULSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE HEATER PRE-PULSE	2.0	1.9	1.8	1.8	1.7	1.6	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.0	1.0	0.9	0.8	0.7

(15pl)

FIG.34A

P₁ TABLE FOR MEDIUM EJECTION AMOUNT MODE
(FOR LOW TEMPERATURE)

HEAD T TEMPERATURE (°C)	~16	~18	~20	~22	~24	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~50
SMALL HEATER PRE-PULSE (μsec)	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0	0.8	0.6	0.4	0.2	0	0	0	0
LARGE HEATER PRE-PULSE (μsec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(25pl)

FIG.34B

P₁ TABLE FOR LARGE EJECTION AMOUNT MODE
(FOR LOW TEMPERATURE)

HEAD T TEMPERATURE (°C)	~16	~18	~20	~22	~24	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	50~
SMALL HEATER PRE-PULSE (μsec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE HEATER PRE-PULSE (μsec)	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2

(40p1)

FIG.35A

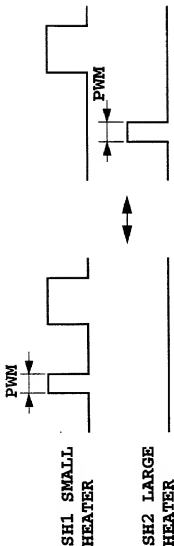
P₁ TABLE FOR LARGE EJECTION AMOUNT MODE
(FOR HIGH TEMPERATURE)

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	60~
SMALL HEATER PRE-PULSE (μsec)	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0
LARGE HEATER PRE-PULSE (μsec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(40pl)

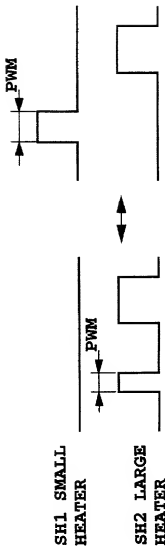
FIG.35B

(FOR HIGH TEMPERATURE) (FOR LOW TEMPERATURE)



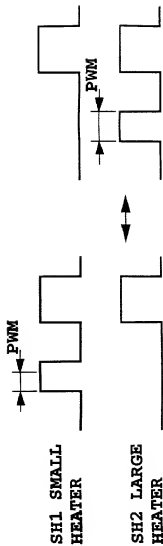
(FOR SMALL EJECTION
AMOUNT MODE)

FIG. 36A



(FOR MEDIUM EJECTION
AMOUNT MODE)

FIG. 36B



(FOR LARGE EJECTION
AMOUNT MODE)

FIG. 36C

OFF TIME P₂ TABLE FOR SMALL EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER OFF TIME (μsec)	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2
LARGE HEATER OFF TIME (μsec)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(15pl)

FIG.37A

OFF TIME P₂ TABLE FOR MEDIUM EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~
SMALL HEATER OFF TIME (μsec)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARGE HEATER OFF TIME (μsec)	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0	0.8	0.6	0.4

(25pl)

FIG.37B

OFF TIME P₂ TABLE FOR LARGE EJECTION AMOUNT MODE

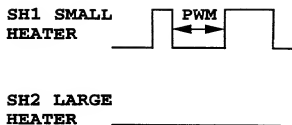
HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER OFF TIME (μsec)	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2
LARGE HEATER OFF TIME (μsec)	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2

(40p1)

FIG.37C

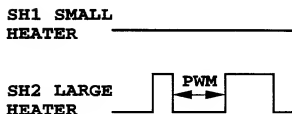
(FOR SMALL EJECTION
AMOUNT MODE)

FIG.38A



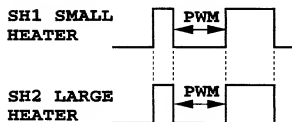
(FOR MEDIUM EJECTION
AMOUNT MODE)

FIG.38B



(FOR LARGE EJECTION
AMOUNT MODE)

FIG.38C



OFF TIME P₂ TABLE FOR SMALL EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	60~
SMALL HEATER OFF TIME (μsec)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARGE HEATER OFF TIME (μsec)	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0	0.8	0.6	0.4

(15pl)

FIG.39A

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OFF TIME P₂ TABLE FOR MEDIUM EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER OFF TIME (μsec)	4.0	3.6	3.2	2.8	2.4	2.0	1.6	1.2	0.8	0.4	0								
LARGE HEATER OFF TIME (μsec)	-	-	-	-	-	-	-	-	-	-	-								

(25p1)

FIG. 39B

OFF TIME P₂ TABLE FOR LARGE EJECTION AMOUNT MODE

HEAD T TEMPERATURE (°C)	~26	~28	~30	~32	~34	~36	~38	~40	~42	~44	~46	~48	~50	~52	~54	~56	~58	~60	~60
SMALL HEATER OFF TIME (μsec)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
LARGE HEATER OFF TIME (μsec)	4.0	3.7	3.5	3.4	3.3	3.25	3.2	3.15	3.1	3.05	3.0	2.95	2.9	2.85	2.8	2.75	2.7	2.65	2.6

(40p1)

FIG. 39C

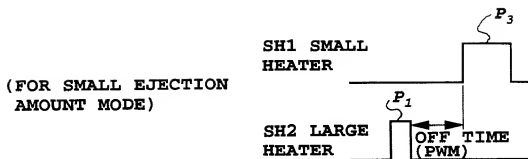


FIG. 40A

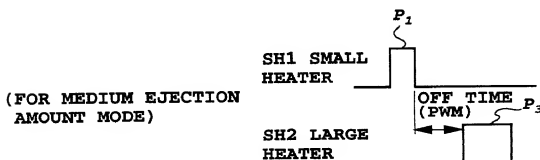


FIG. 40B

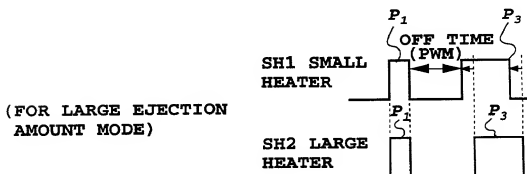
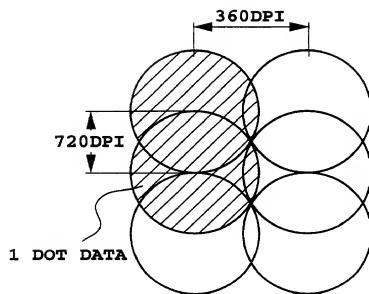


FIG. 40C

**FIG.41**

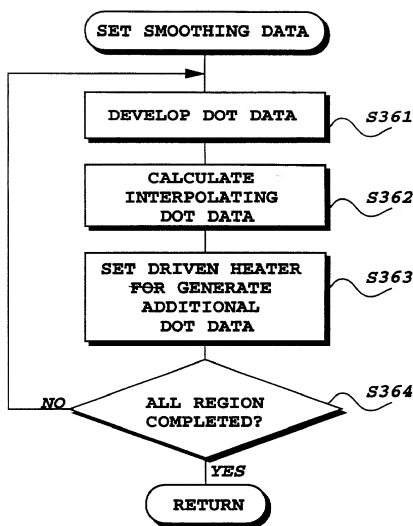


FIG.42

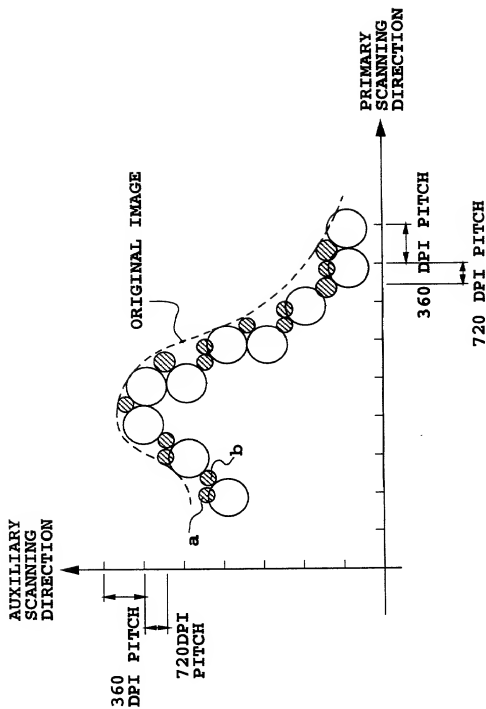


FIG.43

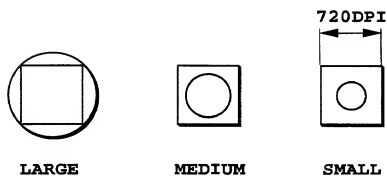
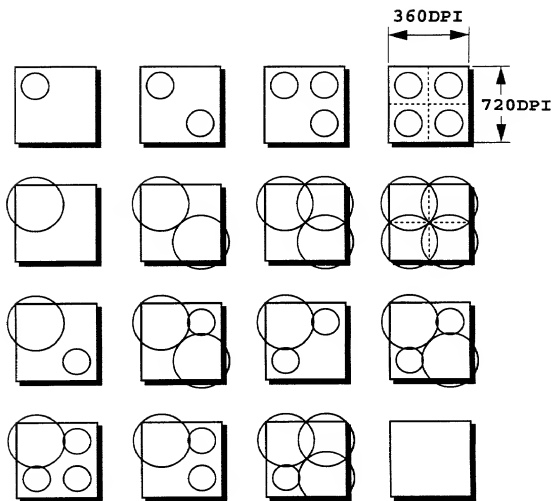


FIG.44

**FIG.45**

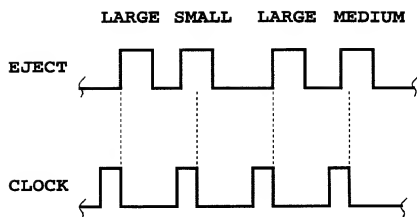


FIG.46A

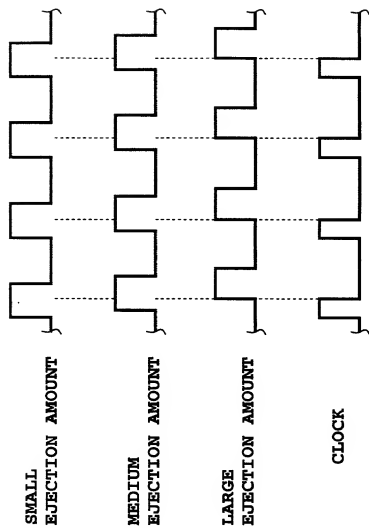
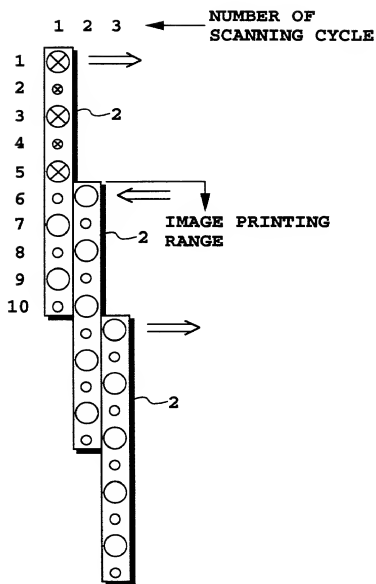


FIG. 46B



5, 5, 5 EQUAL FEEDING OF
EJECTION OPENING
WIDTH

FIG.47

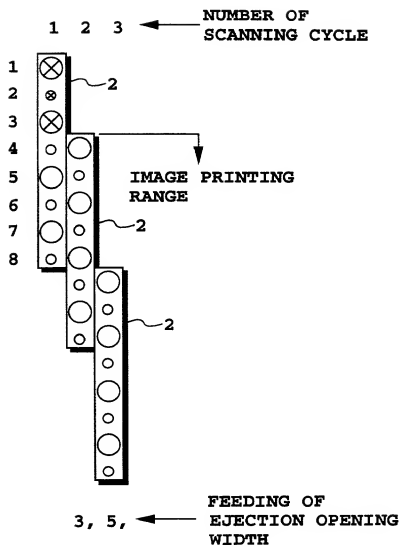


FIG.48

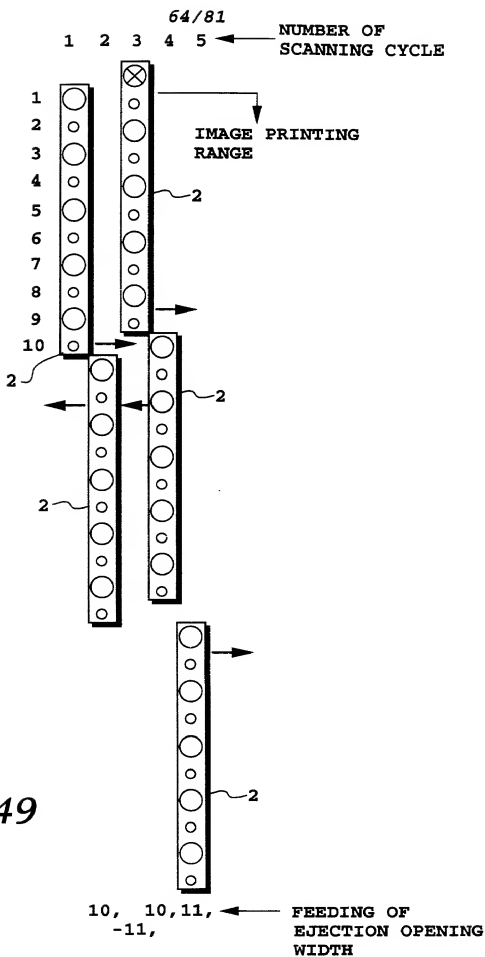


FIG.49

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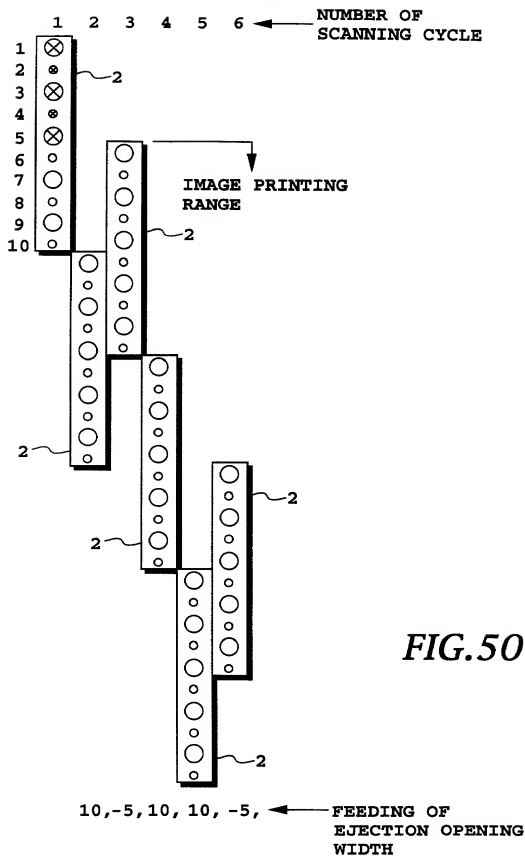


FIG.50

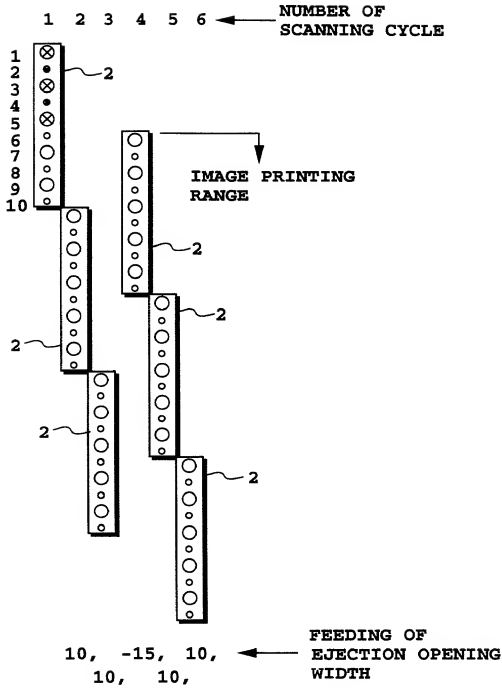


FIG.51

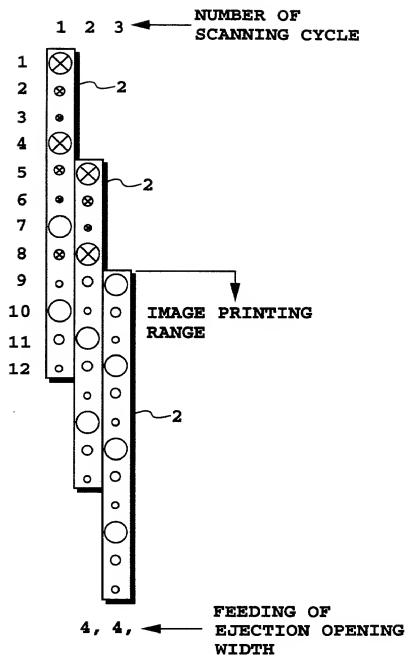


FIG.52

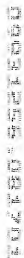


FIG. 53

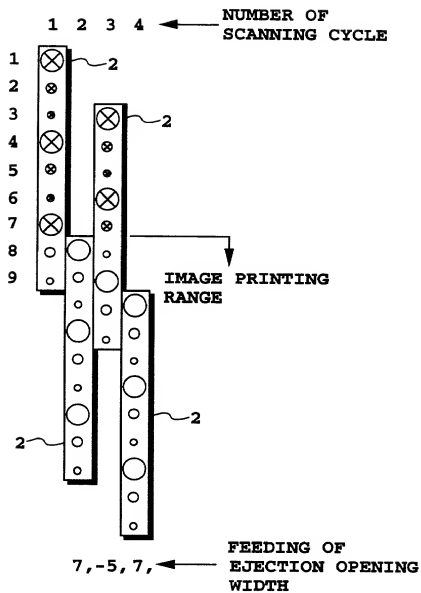


FIG.54

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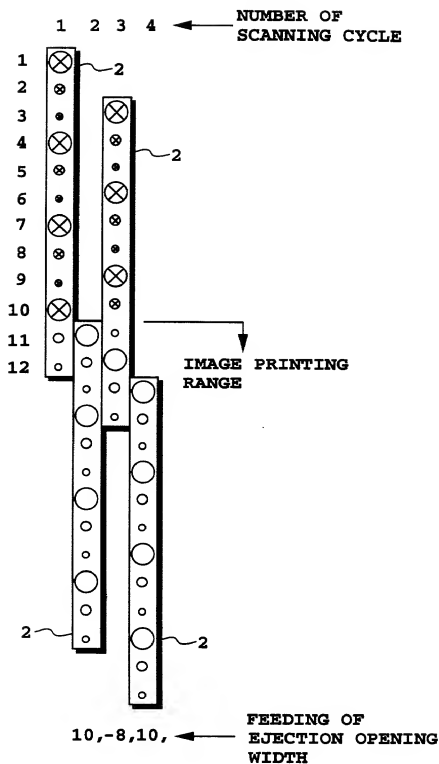


FIG.55

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1 2 3 4 5 6 7 8 ← NUMBER OF
SCANNING CYCLE

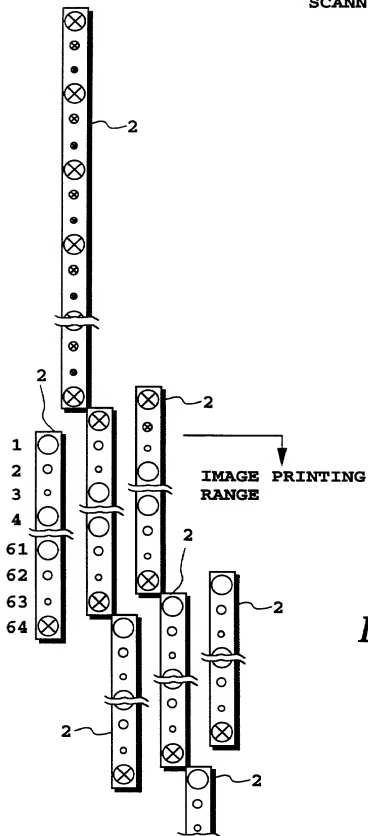


FIG.56

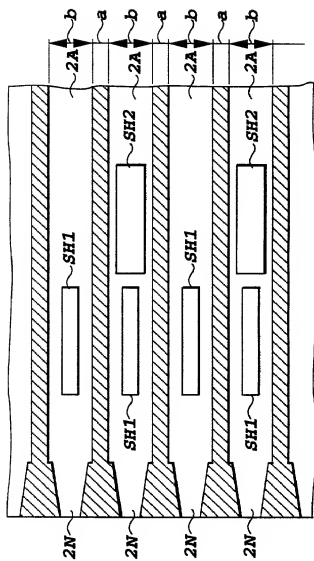
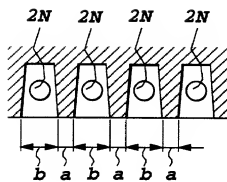


FIG.57A

**FIG.57B**

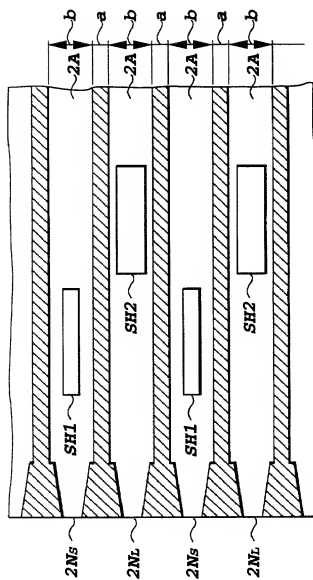
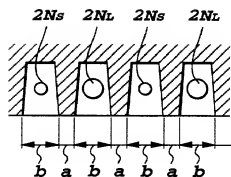


FIG. 58A

**FIG.58B**

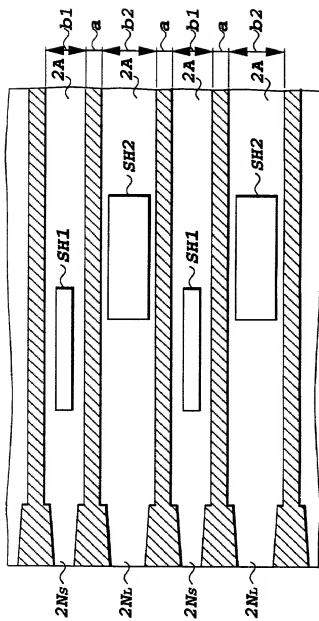
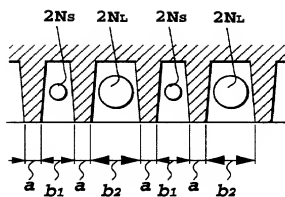


FIG. 59A

**FIG.59B**

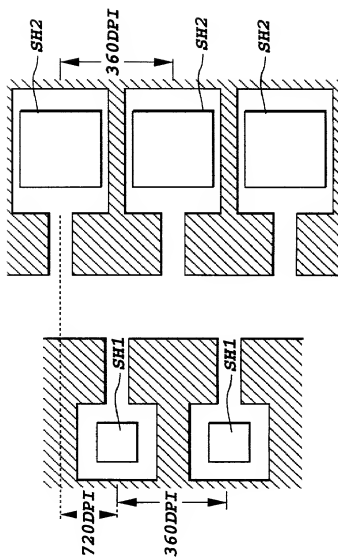


FIG.60A

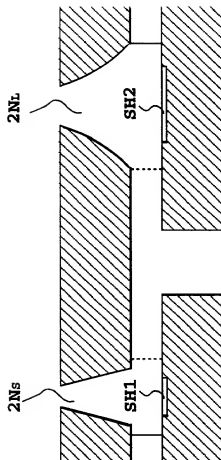


FIG. 60B

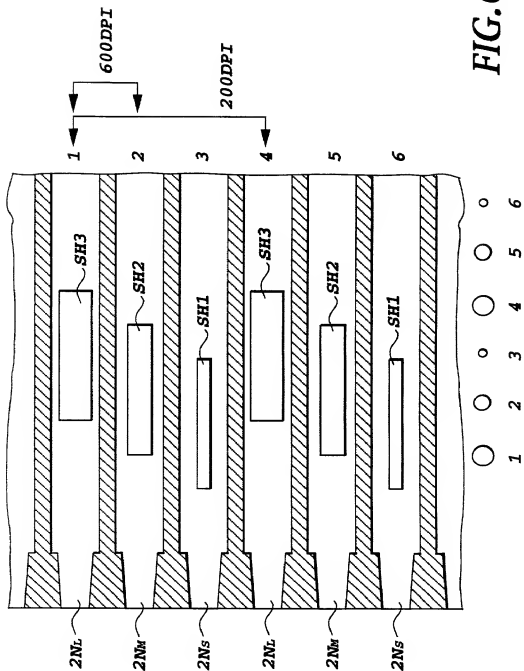


FIG. 61

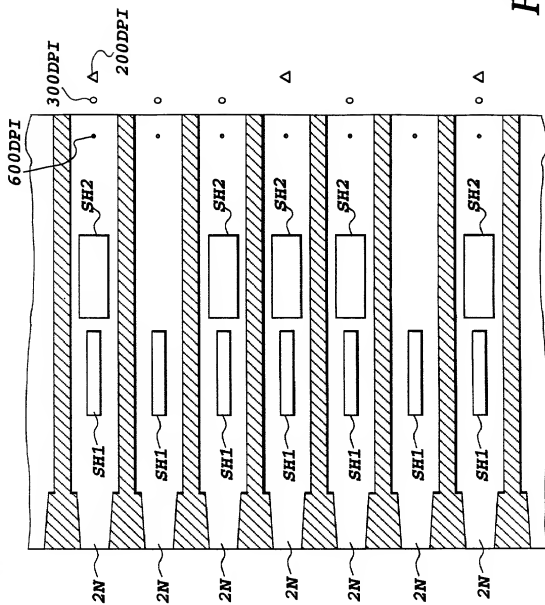


FIG. 62